Berkeley Water Center
Science Advisory Committee
Meeting, April 2006

1. Meeting goals
2. The BWC concept
3. Research mode
4. Research plan outline
5. Thoughts on SAC role

Yoram Rubin's Presentation to SAC, April 24, 2006

Meeting Goals

1. Review the BWC research plans before the Science Advisory Committee (SAC) at an early stage…and by that..
2. Open the door for a productive dialogue on our research directions.

BWC Rationale

Meeting the water needs of humans is one of the greatest challenges of the 21st century;

Water management was driven until recently primarily by water supply issues and tackled via engineering solutions.

It is now recognized that effective water management must move beyond engineering solutions and adopt a broader perspective;

..Base on collaboration across academic disciplines as well as between sectors.

Implementing these ideas is BWC mission

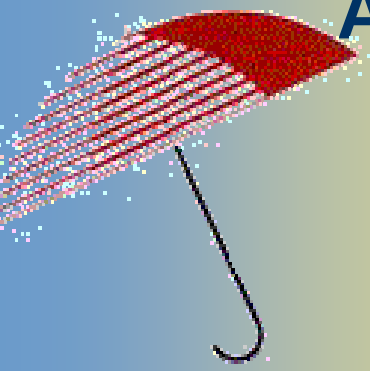
Roadblocks on the way for successful implementation:

1. Multidisciplinary/multi-sectoral research is difficult and there are no clear modes for making it happen;
2. Collaboration among Berkeley researchers (Campus and LBNL) across disciplines and units is not as strong as it can and as it should be;
3. Industry and public (government and non-government) presence are not as strong as they can and as they should be;

The BWC response

1. Multidisciplinary research is difficult and there are no clear modes for making it happen;
   - Develop and test new research modes
2. Collaboration among Berkeley researchers (Campus and LBNL) across disciplines and units is not as strong as it needs to be;
   - Develop modes for seamless integration
3. Industry, public (government and non-government) presence are weak;
   - Create practical modes for industry and public participation;

Research Thrust Areas (RTAs): A tool for promoting and organizing multidisciplinary research



1. Represent broad arenas of inquiry with significant potential for impact;
2. Reflect the needs and interests of the water research community and BWC partners.
3. Provide top-down guidance while encouraging bottom-up creativity
4. Defined through questions and examples
5. Support the BWC mission
6. Management tools for creating balanced research portfolios

Facilitating Water Research and Management through Development of the AmeriFlux and California Water Data Portals

Microsoft Technical Computing Initiative (TCI) Proposal

California State Water Plans and Goals #9 & #11

#9. State government must invest in research and development to help local agencies and governments implement promising water technologies more cost effectively.

#11. DWR and other state agencies must improve data, analytical tools, and information management and exchange needed to prepare, evaluate, and implement regional integrated resource plans and programs in cooperation with other federal, tribal, local, and research entities.

Facilitating Water Research and Management through Development of the AmeriFlux and California Water Data Portals

Microsoft Technical Computing Initiative (TCI) Proposal

Meeting the water needs of humans is perhaps one of the greatest challenges of the 21st century. Over the last decade, it has become increasingly clear that hydrological, meteorological, and biogeochemical processes are coupled and highly dynamic over various spatial and temporal scales. Understanding these processes with sufficient accuracy and in the face of anthropogenic and global changes is a prerequisite to successful management of water resources. Development of such an understanding requires cyber-infrastructure that can allow researchers and water managers to assimilate complex, multi-scale datasets collected from networked micro-sensors to global satellite platforms, and to use that data with modeling or mining tools to test hypotheses and to develop optimal management strategies
The BWC Microsoft Technical Computing Initiative (TCI) projects will demonstrate an advanced approach for tackling 21st Century water challenges by leveraging web services concepts, technologies, and information technology expertise. The BWC TCI will develop prototype data portals for two different water-related communities: the Ameriflux community and the hydrology community focused on understanding and managing water resources within California. The projects will demonstrate what modern commercial data handling tools and practices can bring to carbon and water resources investigations and management. The development is being performed in close collaboration with scientific research leaders, and the value of both prototypes will be tested through relevant end-to-end demonstrations.

The projects are being led by Catharine vanIngen of Microsoft Research, in close collaboration with BWC researchers such as Deb Agarwal and Susan Hubbard of LBNL. Working groups, comprised of water-carbon scientists, computer scientists, and programmers, are being developed to guide the project teams. Members of the working groups include leaders in carbon and California water, such as Bev Law (OSU), Dennis Baldocchi (UCB), Ken Belitz (USGS), and Greg Smith (DWR).

SAC Role:

Based on our Charter:

1. Assist the BWC management team in developing the Center's vision and implementation strategies;
2. Review and approve proposals for Research Thrust Areas and related activities;
3. Review funding requests for various BWC's proposed activities
4. Provide input on the quality of the Center's projects

A Note on Funding

1. BWC is not a research funding organization;
2. It is a community-based research development organization with resources;
3. We are a “start-up”. To get closer to independence, we must be innovative in our message, and efficient in its execution.

..which means..

SAC continuous involvement is needed to assist BWC in reaching its goals

1. BWC's "Business Plan" is posted on the web and is part of the document signed by our founding members;
2. SAC is mandated by this document;
3. http://esd.lbl.gov/BWC